ABSTRACT

The present invention relates to an anisotropic films and method for obtaining the same. The film comprises substrate and at least one modified conjugated aromatic crystalline layer deposited onto said substrate. The said layer is characterized by globally ordered crystalline structure with intermolecular spacing of 3.4 ± 0.3 Å along one of optical axes. The modified conjugated aromatic crystalline layer is formed by rodlike supramolecules, which comprise at least one polycyclic organic compound with conjugated π-system. At least part of the modified conjugated aromatic crystalline layer has electric conductivity and is slightly soluble or insoluble in polar solvents. The films are useful in optical applications, such as polarizers and retarders, and in electronic and light emitting devices, such as fiber optics modulators and switches, solar cells, charge-coupled device (CCD), thin film transistor integrated circuits, light emitting diodes, and light emitting displays. The invention features the use of organic compounds for manufacturing thin crystal films useful in various applications.

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